

METHOD, APPARATUS AND SYSTEM FOR SEGREGATING SALT FROM METAL POWDER

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Cited documents:

- US6409797
- US5259862
- GB778021
- WO2004028655
- WO2005019485

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Abstract of WO2005028145

A process in which an elemental material or an alloy thereof is made by the subsurface introduction of one or more of a vapor halide of the elemental material or components of an alloy into a stoichiometric excess of a liquid reductant alkali or alkaline earth metal producing a powder of the elemental material or alloy and a halide salt of the reductant metal and excess liquid reductant metal followed by filtration to produce a filter cake. A heating element is contact with some of the filter cake to produce a temperature gradient across the filter cake under vacuum to distill liquid reductant metal from the filter cake and to sublimate the halide salt from a hotter portion of the filter cake to a cooler portion. A heated inert sweep gas in contact with the filter cake during and/or after distillation of the liquid metal reductant under vacuum sublimes the halide salt from the filter cake and transport the sublimated halide to a distant location.

Typical Ti powder from IREN, USA



Image magnification: 3000X

Chemical analysis for powder above: O₂ ~ 2300 ppm

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